

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning on page 14, line 21 and ending on page 15, line 10 with the following paragraph:

In reference to Figures 3A-3E, annular wall ~~[[130]]~~ 120, shown in Figure 1C, can be replaced by masks having openings, of different geometries. Figure 3A shows a mask 320 having an oblong opening 322 having a 2:1 length:width ratio and a ridge 324 adjacent to the periphery of opening 322. Figures 3B and 3C show the mask 320 of Figure 3A assembled into a device 300, configured essentially as the device shown in Figure 1F, including pressure plate 310, base plate 330, elastomeric membrane 360 and tube 370. Ridge 324 is configured to apply additional anchoring pressure to the periphery of the elastomeric membrane 360. In use, as shown in Figure 3C, when a fluid is forced into device 300, the membrane is flexed away from base plate 330 with the membrane 360 constrained by ridge 324 of mask 320. Figure 3D shows a mask 420 having an oblong opening 422 having a 4:1 length:width ratio and a ridge 424 adjacent to the periphery of opening 422. Figure 3E shows a mask 520 having an oblong opening 522 having an 8:1 length:width ratio and a ridge 524 adjacent to the periphery of opening 522. The masks of Figures 3D and 3E can be used in device 300 of Figure 3C in the same manner as the mask of Figure 3A.

Please replace the paragraph beginning on page 15, line 11 and ending on page 16, line 3 with the following paragraph:

Figures 1-3 depict only a few of an infinite variety of possible physical configurations of the device. A person of skill in the art would be able to modify devices 100, 200, 300 substituting any practical shape for the annular shape of wall 120 and disc shape of ~~membrane~~ substrate 160 as is depicted in Figures 1A-1G. In reference to Figures 1A-1G, ~~membrane~~ substrate 160 and wall 120 can have other geometries, for example and without limitation, ellipses and squares, and arbitrary shapes so that the stresses imposed on the cell(s) attached to the ~~membrane-substrate 160~~ substrate 160 can vary in one or more axes across the length, breadth, and height of the ~~membrane~~ substrate 160. Alternately, masks different from those of Figures 1C, 3A, 3D

and 3E can be used. Either gas or liquid (collectively "fluids") can be used to cause flexion of ~~membrane 110~~ substrate 160 in either a positive direction, away from the gas or fluid, by placing positive pressure on ~~membrane 110~~ substrate 160 or in a negative direction, towards the gas or fluid, by placing a negative pressure on membrane 110, such as by application of a vacuum. Device ~~[[110]]~~ 100 can have a variety of configurations, with one cell growth chamber or multiple chambers. United States Patent Nos. 6,057,150 and 6,472,202, disclose examples of different devices useful applying positive or negative pressure on the membrane. The elastomeric substrate optionally can be glued to wall 120 and/or base 130, according to known methods and using known adhesives, sealants or lamination techniques, potentially removing the need for pressure plate ~~[[140]]~~ 110 and the need to apply a sealing compression to hold and seal the substrate in place.